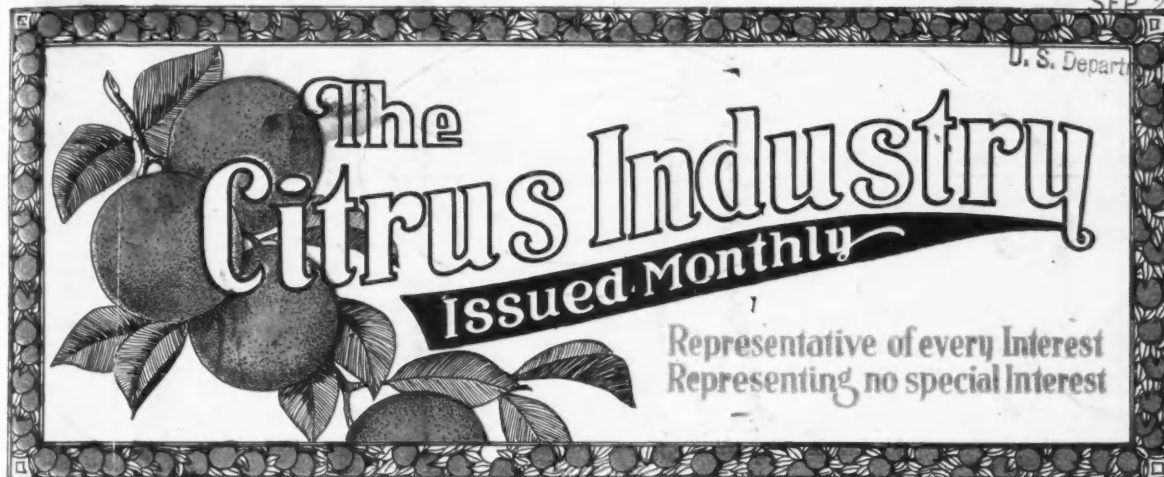


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VOL. 6, NO. 9

TAMPA, FLA., SEPTEMBER, 1925

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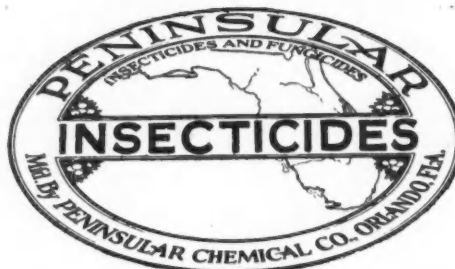
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CALCIUM CASEINATE**

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BLUESTONE**

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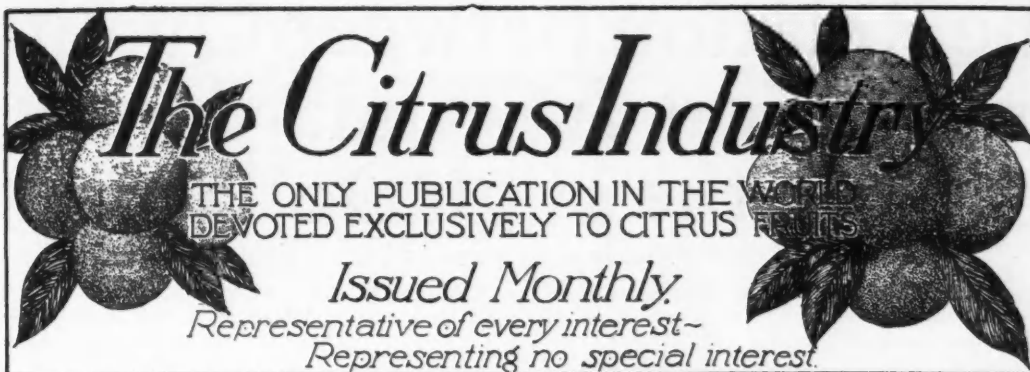
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Better Transportation Service Essential

Stressing the importance to Florida Citrus growers of better transportation service Mr. M. S. Cullum Traffic Manager for Chase & Company, Orlando, Florida, has written a letter to The Florida Times Union, Jacksonville, in which he presents the existing situation and the need for improvement most graphically. Believing that every producer, packer, and shipper of Florida citrus fruits is vitally interested in the matter of improved transportation service The Citrus Industry takes great pleasure in reproducing Mr. Cullum's letter in full. We believe that this letter should be carefully studied and Mr. Cullum's suggestions, so far as possible, be carried out.

Better Transportation Service Needed

Editor, Florida Times Union,
Jacksonville, Florida.

Dear Sir:-

We are glad to note the Times Union's recognition of the importance to Florida of good transportation service, as evidenced by your editorial in your issue of July 26th, headed "New Records for Car Loading".

It is truly a fine thing for everyone that better transportation records are being established throughout the country. The carriers are justly entitled to credit for their endeavor to bring about better conditions.

Much has been done toward improvement in service throughout

the country, but there is yet much to be done in this connection in order that Florida may fully enjoy its natural advantages.

Recognizing that the railroads must have the co-operation of the shipping public, the Florida growers and shippers have organized under the name of the Growers' and Shippers' League of Florida, with the high purpose of co-operating with the carriers to the end that transportation difficulties may be quickly and more easily solved, thru the combined efforts of the growers and shippers of this state and transportation lines. It is a matter of pride that this state can point to the efforts, and the results of these efforts, on the part of our growers and shippers, in helping the railroads set a new record of service. Much time, money, and thought have been generously given, and the good work is still coming on.

Unbiased persons generally admit that the Florida citrus fruit is far superior to any other received in this country. The secret of this superior quality lies in the content of the fruit, but in this fact we have a serious problem—the Florida fruit does not have the carrying quality of competitive fruits and must be handled more quickly.

In studying the competitive situation, in order to better understand the Florida problem of getting the highest prices for Florida products, we have developed these facts:

Shipments from California, altho

moving thru very mountainous country, which presents extreme transportation difficulties, average approximately 15 miles per hour up to the Mississippi River. Beyond the Mississippi River, physical conditions are not so bad and shipments average to the large markets in the East between 18 and 25 miles per hour. From St. Louis to Buffalo, about 20 miles per hour; from St. Louis to New York, about 18 miles per hour, including delivery.

On the other hand, while products from Florida generally move thru territory that is less mountainous, and presents fewer transportation difficulties, the average time to the principal Eastern markets is between 11 miles and 13 miles per hour. From Lakeland, Florida, as a representative point, to Detroit, Michigan, the average time in transit is approximately 11 miles per hour; to Buffalo, about 13 miles per hour; to New York about 11½ miles per hour, including delivery.

A recent statement published by the Union Pacific-Southern Pacific System, is very interesting. Notwithstanding the difficulties which these lines had to overcome. It is claimed that approximately 70,000 cars of Eastbound fruit were handled by them in 1924 without a complaint, with only two trains out of 2289 over an hour behind schedule. We understand that the two trains that missed connections were delayed due to a misunderstanding of symbols.

Continued on page 24

The Relation Between Quality Production, A Standard Pack, and the High Dollar

Paper read by C. R. Pilkington at Farmers' and Fruit Growers' Week

Let us begin with a plain statement of fact. Just as surely as effect follows its cause, so the ability of a grower to obtain the full measure of value from his efforts hinges ultimately on the quality and pack of his products. I say this with full recognition of the true merits of other important factors in the advantageous handling of perishables, and which contribute to the same end. But no other factors so fully and distinctly justify themselves in financial results, for quality and pack limit all the rest.

Quality is the foundation of successful effort in both advertising and selling, and what is of perhaps greatest importance, real quality takes away the humdrum of mere routine and creates a vital interest in the product all along the line. It rightly brings pride to the grower himself and stimulates him to still greater effort with corresponding better results; it puts confidence, life and vitality into advertising effort and marketing service; and it attracts, interest and holds both the dealer and the consumer.

The importance of superior quality and packing in the sale of perishables is not a new idea. It has been discussed for years. Everybody readily accepts the principle, but if it is to be of any real consequence it must be carried beyond its status as a theory and be given practical application in practice.

This is a matter of such real importance to every grower individually and to the industry as a whole, that it should never be lost sight of, and the purpose at this time is, by illustration and precept or possible presentation from a different angle, merely to emphasize things we already know.

There are times and even entire seasons when distinctly inferior products can be sold at what appear to be excellent prices. Whenever this is true, it is the result of some abnormal condition, either with respect to the volume of production of the particular product or of competitive products, or some other unusual cause.

But it is normal conditions and not the abnormal which we must con-

sider and always anticipate, and in these days, under normal conditions the production of all kinds of perishable products has reached a stage where low average in quality and careless packing almost certainly forecast financial failure. On the other hand, he who produces a superior article, gets a premium for it.

Let us get this matter into concrete form by emphasizing three things:

First, that real quality production is possible on the part of every intelligent grower, who is honestly willing to make the effort.

Second, that its accomplishment however, requires consistent, intelligent, personal application from year to year.

Third, that there is positively no substitute for superior quality and pack in the matter of financial results.

Because of its outstanding importance please consider this last statement first. There positively is no substitute for quality, inherent in the product itself, and standardization in the packing of it, in the production of financial results. The importance of urging a keen realization of this fact arises by reason of what seems to be a very natural tendency, or at least a very common tendency, for persons to deceive themselves by believing that some other thing, such for instance as elaborate advertising campaigns or some other collateral device or effort, can be made to accomplish the same result.

I refer directly to advertising, not because I fail to realize both its necessity and merits and the splendid results it may be made to produce, but in this immediate connection because advertising seems to be the remedy to which so many minds instantly turn as a solution for market difficulties, in the apparent belief, that it can be made to accomplish what is really impossible. What I want to point out is that an attempt to build up a market by advertising, while continuing to furnish goods of inferior quality and pack, cannot accomplish permanently satisfactory results, nor in fact even temporarily

be an adequate substitute for quality.

When efficiently conducted, advertising can be made an instrument of almost incalculable value. But any advertising man will tell you that successful advertising must have as its foundation merit in the product advertised, and it is quality alone that holds the market once created, establishes it on a permanent basis and makes possible its consistent enlargement. Ingenious advertising schemes, attractively presented, may temporarily gain a market for inferior goods, but such a result cannot be more than temporary. Being based on misrepresentation or leaving open the way for dissatisfaction to the purchaser, it is almost certain ultimately to produce a re-action which will far outweigh any temporary gain.

Almost every season when market conditions are unsatisfactory, the question of over-production arises. I do not intend to discuss that question at length, but there is an answer to it and I personally do not believe that there is an immediate prospect or serious danger of permanent over-production in this state, PROVIDED the entire situation is understood and intelligently handled by all parties concerned.

Over-production is a relative or comparative term. It does not have reference merely to VOLUME of production. It has to do also with the available market outlet, the volume of competitive fruits, general economic conditions and consequent purchasing power of the market territory and not least of all, the quality of the product and the manner in which it is packed. It is a situation determined as much from the consuming end as from the producing end. The question of over-production is consequential to the producer because of its effect on the results he obtains, and to my mind, entirely regardless of the volume produced, there exists an over-production of any particular commodity or any particular QUALITY of commodity, whenever with efficient marketing service a price cannot be obtained which will leave the grower a fair and reasonable margin of profit for

his effort.

Looking at it in this light, under normal conditions there is already an over-production of inferior goods. The time is already here when, except under abnormal conditions, inferior quality and slovenly packing will fail to produce a profit. It is easier to find a satisfactory market for 20,000,000 boxes of high class fruit, properly packed, than it would be to find a market for 15,000,000 boxes, one-half of which consisted of merely mediocre or inferior quality. Every box of inferior fruit is a drag on the market. It not only brings no consequential return to the producer for itself but it supplies, to a certain extent, the consumptive demand; takes the edge off the market and steals from what might otherwise have been obtained for the better grades. It may do even worse than that and strike a double blow, for it often fails to realize the cost of packing, freight and marketing and the deficit it produces has to be deducted from the already reduced margin of profit on the better fruit.

It was commonly remarked two years ago that if one-third of the total volume of citrus fruits from Florida that season had never been shipped, the other two-thirds would have produced a larger total net return to the growers than the entire volume actually shipped.

Probably every experienced fruit man in Florida joins in that belief. Such suggestions however did not have to do only with the matter of the large volume of that crop, but with the importance of eliminating the undesirable and inferior grades under strained market conditions. And it is under just such conditions that inferior fruit not only signally fails to be profitable in itself but is the more apt to be a liability against the good.

I would not burden this discussion with figures but I do want to use one illustration of the effect of QUALITY ALONE.

And I use this particular illustration because I know that the figures are authentic; because it involves considerable quantities of the same lines of fruit, over a period of three years; because all the fruit was packed under the same supervision and with the same care and was marketed consistently throughout the three seasons through the same channels and in the same markets. The conditions were such as to show distinctly the effect of quality of the fruit alone in the matter of prices obtained.

In the season of 1922-23 there was a total volume almost 500,000 boxes

THE CITRUS INDUSTRY

of the citrus fruit which I have taken for this illustration. Of that total volume almost 21,000 boxes came from certain groves which, because of the care they receive, uniformly produce fruit of high average quality. In that season the 21,000 boxes from these groves produced a net return F. O. B. the packing house, which averaged slightly over \$1.08 per box higher than the average net return on the entire volume, even with the advantage of these 21,000 boxes included in the total. In the season of 1923-24 there was a total of slightly over 500,000 boxes of the same lines of fruit, of that total about 28,000 boxes were produced by the particular groves I have mentioned. These 28,000 boxes produced an average net return of approximately \$1.49 per box F. O. B. the packing house in excess of the average net return of the total. In the season of 1924-25 there was a total of more than 420,000 boxes of this line of fruit, of which more than 25,000 boxes were produced by the particular groves in question, and these 25,000 boxes brought an average net return F. O. B. the packing house of almost \$.93 per box in excess of the average of the total.

Figures are hard to keep in mind but please remember two points in this illustration. First, that the figures given are averages for the entire lots and not merely comparisons between the best fruit and the poorest. If you will remember that and do a little figuring you will find that the 21,000 boxes in 1922-23 gave a premium above the general average of a total of more than \$22,000; that the 28,000 boxes in 1923-24 gave a total premium of nearly \$42,000 above the general average; and that the 25,000 boxes in 1924-25 gave a premium of more than \$23,000 above the general average. These totals help to impress the matter.

In the second place, not that the greatest advantage, both on the per box average and the total, was obtained in the season of 1923-24, which was the year when the average markets were lowest of the three years considered; demonstrating clearly that quality counts most when marketing conditions are most difficult.

I have said that every intelligent grower, who is willing to make the necessary effort, can accomplish quality production. Not every grove, regardless of its location, root stock, soil and other factor peculiar to it, can be made to produce a quality of fruit entirely equal to what might be produced on some other grove of different character or special advan-

Seven

tages. But I have seen enough in actual results to be convinced that any grove of sufficient merit to properly entitle it to be rated as of commercial character can, with proper care and attention, be made to produce fruit of sufficiently good average quality and appearance to meet the essentials of this discussion.

This of course requires proper effort. It involves an intelligent study by the grower of the peculiarities of his own grove and the particular attention it may require. Such application of study and effort needs to be personal, **persistent** and unremitting and carried out consistently year after year. It is hardly necessary that I elaborate these points. Nature offers the raw materials but the measure of success depends largely on our own efforts.

Thus far we have made merely incidental reference to the question of packing, but this is so essentially a part of the sum total of the idea of quality in a product as finally presented to the dealer and consumer, that it can hardly be separated from a discussion of inherent quality in the product itself, and everything that has been said in the general discussion of quality may well be applied to the matter of proper packing.

Every phase of handling fruit from the tree to the car is involved in the idea of a standardized pack. And if standardization is to be made on a high plane, this means the avoidance of clipper cuts, bruising in transportation or otherwise and anything that may injuriously affect either the appearance or keeping quality. It involves the efficiency of the machinery in the packing house in cleansing, drying and sizing; the standard and accuracy in grading; the skill of the packer; the box making; the quality and attractiveness of the packing materials used; the marking of the fruit and the package; and every other packing house operation, including the proper loading.

The main purpose of a standardized pack is to eliminate uncertainties in regard to the contents of the package and thereby insure to the purchaser that the contents will be exactly as represented and what, by experience, he has learned to anticipate. One of the most important elements in successful merchandising is the establishment of confidence in the purchaser as to the thing he buys. This is particularly true with respect to perishables. A carefully standardized package establishes the confidence of the trade and not only

Continued on page 19

Borax As Disinfectant for Citrus Fruit

By William R. Barger, Assistant Physiologist, and Lon A. Hawkins, Physiologist, Horticultural Investigations, Bureau of Plant Industry, United States Department of Agriculture

The use of disinfectants in washing citrus fruits has been a common practice in California for many years. In 1906 Smith showed that the brown-rot of lemons caused by *Pythiacystis citrophthora* Smith and Smith, could be controlled by a solution of potassium permanganate, copper sulphate, or formalin in the wash water. Since then copper sulphate has been used to a considerable extent commercially. For fifteen or twenty years hot water and soap have been employed in washing both oranges and lemons, and for the past ten years a soap containing borax has been extensively used. It has also been common practice in some packing houses to use a dilute solution of borax in the wash water in addition to the soap. Except in the case of brown-rot of lemons, there appears to be no data on the exact effect of these various disinfectants in the control of the Fungous diseases of Citrus which gain entrance to the fruit in handling and harvesting operations and are particularly evident during transit and on the market. To obtain more exact information upon the possibilities of controlling some of the common Citrus parasites such as blue mold, caused by *Penicillium italicum* Wehmer, and green mold, caused by *Penicillium digitatum* Sacc., a series of experiments was conducted in which some common and cheap disinfectants were used in the wash water. Since the results of these investigations were fairly definite and present a basis for further commercial application of disinfectants in the control of certain Citrus diseases, a preliminary presentation is here given.

The work was begun in California early in 1924, either Navel or Valencia oranges being used in all experiments described in this paper. In the first preliminary experiment, powdered boric acid U. S. P. and potassium alum Tech. were used. Navel oranges, which had been picked from four to six weeks, were prepared for the experiment by removing thin slices of skin from each fruit. Seventy-five fruits were immersed for five minutes in a solution of 2.5 per cent of boric acid at a temperature of 120 degrees F.; two other lots of 75 each

were treated, one by immersing in a solution of 4.5 per cent powdered alum and the other in hot water only five minutes at 120 degrees F. After the fruits had been removed from the baths they were inoculated with spores of blue mold obtained from a decayed fruit. The fruit was dried, packed, and stored in a room having a temperature of about 70 degrees F. and a humidity of about 90 per cent. After one week both the fruit treated with hot water and that treated with powdered alum solution showed only 2.5 per cent decay from blue mold and about the same percentage from green mold. Further holding of the lot showed some decay from what seemed to be *Alternaria* sp. or *Pythiacystis* sp. In this connection it is interesting to note that Smith found that very dilute solutions of boric acid would not control *Pythiacystis citrophthora* on lemons.

This experiment indicated that boric acid offered very promising possibilities and that alum was apparently of no particular value in concentrations such as could safely be used in washing the fruit. Borax (technical grade) was later tested and found to be as effective as boric acid in controlling blue-mold decay, and, being much cheaper, was used in all later experiments. The investigation here described was concerned mainly with testing the efficiency of a 2.5 per cent solution of borax at various temperatures and with different methods of application in the control of blue and green mold which had been inoculated on the surface of wounded fruit and in punctures similar to those made by stem or thorns.

The fruit was prepared for inoculation either by cutting thin slices of the rind just below the oil cells and into the white portion similar to the wound made by a clipper cut or by puncturing the rind with a knife to the depth of about 2 mm. The depth the knife was thrust into the fruit controlled by wrapping tire tape around the blade so that it could penetrate the fruit only to the depth required. The inoculations were made by rubbing spores on the cut surface, where a portion of the rind was sliced away, and by dipping the knife

in a mass of spores when making the wound by puncture. The spores for inoculating the fruit were obtained from decayed oranges. Since the greater part of this work was done under ordinary packing-house conditions and with the regular packing-house machinery, no attempt was made to get pure cultures of the fungi for making inoculations. Decayed oranges were selected, however, as the source of spores, because judging from the external character and color (1,3), these seemed to furnish practically pure cultures of the fungi. In many cases, undoubtedly, the fruit was inoculated from mixed cultures and there was especially in the controls considerable possibility of natural inoculations when the regular packing-house machinery was used in handling the fruit.

In the early experiments the procedure was to wound the fruit, treat it with a 2.5 per cent solution of borax, either by immersing or floating it in this solution, inoculating it by rubbing a finger dipped in the blue mold spores on the cut surface, drying in the air, wrapping, packing, and storing. The fruit was usually stored at about 70 degrees F. with humidity of about 90 per cent. Controls were prepared in exactly the same way except that instead of being treated with the borax solution they were treated with water only and inoculated with the fungi. At the end of one week the fruit was examined, the decayed fruits classified and removed, and the remaining sound fruits allowed to remain for the next inspection. When the fruit was immersed, it was held about 4 inches below the surface of the solution by a rack. When it was floated no weight was used, and it was allowed to float freely in the tank of solution, from one-eighth to one-tenth of the rind being exposed above the surface. The results of the experiments made with blue mold fungus on Valencia oranges are shown in Table I.

Table I shows that there is much more decay in the untreated fruit after one week than in any of the borax-treated lots. In the latter the best results were obtained at the higher temperatures and when the fruit

THE CITRUS INDUSTRY

Nine

was allowed to remain for four minutes or more in the solution. In no case was there more than 4.5 per cent of blue mold in any of the lots treated at 120 degrees F. except in the two lots sprayed with water after being treated with the borax solution. In these lots the decay caused by blue mold after one week was 6.1 and 7.8 per cent. Evidently for the best results the borax solution should be allowed to dry on the fruit. At the higher temperatures blue mold is apparently controlled as well by allowing the fruit to float in the borax solution as by immersing it. At the lower temperatures, however, floating did not give as good results as did immersion. In the lots of fruit injured by puncturing and inoculating in these wounds, practically as good control was obtained as when the wounds were superficial.

The results of the inspections after two weeks show some increase in the amount of blue mold present in the treated fruit, although in the lots treated at 120 degrees for eight minutes there was in no case more than 5 per cent of blue mold decay. There was little increase in blue mold decay after five to seven weeks. The amount of decay caused by green mold was very much higher during the later inspections than at the first. This fungus is apparently not so easily controlled by borax as is the blue mold fungus. Results of a series of experiments on the treatment of Valencia oranges inoculated with green mold are shown in Table II. The spore for inoculating this fruit were obtained from decayed specimens which appeared to be affected only with green mold, although, of course, as in the case of blue mold there was probably some contamination.

An inspection of Table II corroborates the observation indicated by Table I, namely, that green mold is not readily controlled by treatment with this concentration of borax. In the lots of fruit wounded on the surface and immersed, there was no apparent infection from blue mold but at the end of five weeks 73 per cent or more of the fruit had decayed from what apparently was green mold. With the fruit inoculated by puncturing and immersion, the results are not so striking; there is considerably more blue mold present, indicating contamination of the culture used for inoculation. The percentage of rot caused by green mold as shown by the later inspections is high in all cases, although it was above 50 per cent in only one case.

Continued on page 24

Table I.—Showing percentage of decay in Valencia oranges, wounded on surface or punctured, immersed or floated in a 2.5 per cent solution of borax, inoculated on the wounds with blue-mold spores, and held in a warm room at high humidity.

Treatment	Temperature bath	Time	Number of fruit	Percentage of decay after—							
				One Week 2 Weeks 5 Weeks 7 Wks							
				Blue mold	Green mold	Blue mold	Green mold	Blue mold	Green mold	Blue mold	Green mold
Control wounded and inoculated but not treated with borax	Degrees F.	Minutes	73	98.6	0	—	—	—	—	—	—
			100	100.0	—	—	—	—	—	—	—
			513	90.0	—	—	—	—	—	—	—
			686	—	92.4	0	—	—	—	—	—
			100	100.0	—	—	—	—	—	—	—
Wounded on surface, immersed in borax solution and inoculated	73	4	100	13.0	17.0	14.0	65.0	14.0	84.0	—	—
		8	13	0	0	0	15.3	—	—	—	—
		120	224	4.4	2.6	—	—	—	—	—	—
		120	459	—	—	9.3	32.4	—	—	—	—
		120	224	4.5	0	—	—	—	—	—	—
		120	75	0	6.6	—	—	—	—	—	—
		120	15	2.6	2.6	—	—	—	—	—	—
		120	395	2.2	1.2	—	—	—	—	—	—
Wounded on surface, floated in borax solution and inoculated	73	4	972	—	12.7	36.0	—	—	—	—	—
		4	485	—	—	—	—	—	—	—	—
		73	100	2.3	0	—	—	—	—	—	—
		120	423	41.0	16.0	42.0	48.0	42.0	54.0	—	—
	120	8	0	—	4.9	25.8	—	—	—	—	—
		8	488	—	—	—	—	—	—	—	—
Wounded on surface, immersed in borax solution, inoculated, and rinsed with water	73	4	50	26.0	16.0	26.0	38.0	26.0	60.0	—	—
		6	50	60.0	8.0	64.0	24.0	64.0	36.0	—	—
Wounded on surface, immersed in borax solution, inoculated and sprayed with water	120	6	587	6.1	6.8	—	—	—	—	—	—
		6	701	7.8	—	45.1	30.1	—	—	—	—
Control punctured and inoculated not treated with borax			250	83.6	0	84.8	0	86.0	0	—	—
Wounded by puncturing, inoculated and immersed in borax solution	70	8	50	0	0	2.0	0	2.0	4.0	2.0	4.0
		4	100	0	0	2.0	3.0	2.0	34.0	3.0	40.0
		120	6	100	2.0	0	6.0	4.0	6.0	46.0	7.0
		8	150	3.3	0.6	4.6	2.6	5.3	30.0	5.3	37.9

Table II.—Showing percentage of decay in Valencia oranges, wounded on surface or punctured; immersed or floated in a 2.5 per cent solution of borax, inoculated with green mold spores, and held in a warm room at high humidity.

Treatment	Temperature bath	Time	Number of fruit	Percentage of decay after—							
				One Week		2 Weeks		5 Weeks		7 Wks	
				Blue mold	Green mold	Blue mold	Green mold	Blue mold	Green mold	Blue mold	Green mold
Control wounded on surface and inoculated, not treated with borax	Degrees F.	Minutes									
			100	80.0	20.0	—	—	—	—	—	—
	67	4	100	0	27.0	0	97.0	0	99.0	—	—
	8	4	100	0	15.0	0	92.0	0	95.0	—	—
Wounded on surface and immersed in borax solution	120	4	100	0	24.0	0	92.0	0	98.0	—	—
	120	8	100	0	2.0	0	50.0	0	73.0	0	80.0
Control wounded by puncturing, inoculated not treated with borax			37	0	100.	—	—	—	—	—	—
Wounded by puncturing, inoculated and immersed in borax solution	73	4	100	11.0	2.0	15.0	2.0	18.0	24.0	19.0	28.0
	73	6	100	16.0	0	18.0	7.0	21.0	45.0	22.0	50.0
	70	8	46	0	8.7	0	48.0	0	84.0	—	—
Same except treated by floating in borax solution	73	4	50	8.0	0	8.0	4.0	10.0	42.0	10.0	44.0
	73	6	50	14.0	0	18.0	4.0	18.0	26.0	18.0	32.0

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GROVE CALENDAR FOR SEPTEMBER

Timely Suggestions for Grove Work During the Present Month.

Give last fertilization to young non-bearing groves and nursery stock.

Spray trees with an oil emulsion for white fly and purple scale.

Cut cover crop of cowpeas or beggarweed to avoid an infestation of pumpkin bugs later.

Spray pecans with 4-4-50 bordeaux to control scab.

Add one pound of lead arsenate to 50 gallons of bordeaux to control leaf case bearer.

Prepare land for harvesting nuts later in the fall.

AVOID SHIPMENT OF GREEN FRUIT

With the approach of the citrus shipping season it behooves growers, packers, and shippers of Florida citrus fruits to be on their guard against the shipment of green or unfit fruit.

In years past Florida has suffered greatly by reason of a tendency on the part of some shippers, actuated by the desire to get the high dollar for early fruit by making shipments at the earliest date permitted by law regardless of the maturity and condition of the fruit shipped. That this practice has cost growers of Florida millions of dollars in the aggregate and has given Florida fruits a bad reputation in some markets is now generally recognized.

Last season growers, packers, and marketing organizations united in the effort to curtail such shipments and eliminate so far as possible the practice. That these efforts were in great measure successful was demonstrated by the much smaller percentage of immature fruit find-

ing its way to market. However, the percentage of such fruit shipped last season was much too great and a concerted effort was made to secure legislation controlling the movement of all fruits from the state. Such a law, backed by practically unanimous sentiment of Florida growers and shippers, was enacted. This law may not be perfect, but it represents the best thought of the ablest men in the industry.

With this so-called green fruit law in operation and with the continued cooperation of growers and shippers, it is believed that the movement of immature fruit from the state this year will be reduced to a minimum. State and Government officials entrusted with the enforcement of regulations should be accorded every cooperation on the part of shippers and any violation or attempted violation of the laws or regulations governing the shipment of unripe and unfit fruit should be prosecuted. If none but fully ripened and thoroughly tested fruit is shipped Florida growers will have won a victory for themselves and for the reputation of Florida fruits which will result in greater profits this year and in the years to come.

DON'T STARVE THE TREES

During the past two years there has been a tendency on the part of some growers to minimize on their applications of fertilizer. With groves producing record crops but bringing minimum prices, many growers have felt the need of economy and have practiced it at the expense of their trees by failing to provide proper and sufficient plant food. This has resulted not so much in a reduction of quantity as in the reduction of quality of the fruit produced. A starved tree can no more produce quality fruit than a starved cow can produce rich milk. Both are physically impossible.

Right now is the time to supply your trees with the plant food necessary to the production of a heavy bloom next spring and to carry the trees through the winter season in thrifty condition. The fall fertilization is an important factor in the production of next year's crop and with the present tendency toward higher prices for citrus fruits no grower can afford to neglect this important factor nor fail to provide his trees with the plant food essential to their welfare.

Money spent in proper fertilizer for application at the proper time should not be regarded by the grower as an expense. It is just as much an investment as the trees themselves and will just as surely return dividends.

SWAT THE BUGS

With the citrus crop of apparent excellent quality now brought to the eve of maturity and with prospects for better prices than have ruled in recent years, the citrus grower should take steps to finish his crop in such manner as to provide for the biggest possible grade. No rust mites should be permitted to rob you of your profits nor should white fly be permitted to reduce your revenue.

If the present crop is to be placed on the mar-

ket at top figures it must grade as "bright". If rust mites and white flies are permitted to harbor on your trees the "brights" will be few and the "russets" many. There is but one way to insure the production of "bright" fruit—and that is to eliminate the rust mite and white fly.

If your sprayer is not in order see that it is put in shape at once. If your duster needs overhauling do that at once. Have everything in readiness to make war on the insect pests the moment they appear.

The safety of the present crop and the size of your bank balance when returns are received from your shipments, depend upon the diligence and thoroughness with which you swat the bugs.

THE CROP OUTLOOK

The consensus of opinion in well informed citrus circles is that the crop of 1925 will fall at least 25 per cent below the yield of 1924. Some authorities place the shortage at an even higher figure. A maximum of sixteen million boxes seems to be agreed upon as the very highest figure for this year's crop.

By far the greater shortage is reported in the grapefruit yield which probably will not exceed 60 or 65 per cent of last year's crop. The shortage in oranges is less pronounced but is sufficiently great to materially affect the total yield.

That this shortage is recognized not only by growers but also by buyers is evident in the prices offered and being paid for the fruit on the trees, which is far in excess of any offerings made by buyers during the past three years.

While this shortage is in large measure due to seasonal conditions and exceptional droppage it must also be remembered that there has been a material reduction in the acreage of bearing groves through the cutting up of many groves for subdivision purposes and other public and private developments. It is entirely probable that the acres of bearing groves thus eliminated will fully equal the new acreage coming into bearing this year on which the yield will be much less than on the older groves which have been cut down.

But while it is unanimously agreed that the crop will be much lighter than that of last year, every present indication would appear to point to greater excellence of quality and a more uniform grade than that of the past two years. If the crop is packed with care and marketed with intelligence the grower should receive more for his crop this year and realize better profits than for any crop since the war.

PROTECT YOUR OWN INTEREST

Whether he ships his fruit himself, sells it on the trees or markets it through some agency, there is a way in which every grower may protect his own interests and those of other growers. That is by insisting that no fruit of his be packed or marketed until it is fully ripened, thoroughly tested, and properly packed and graded. By insisting upon these points and seeing that they are literally carried out, every grower has it in his power to further the inter-

ests of all growers and enhance the reputation of Florida fruits.

ORANGES IN SPAIN

Spain exports yearly, at the present time, approximately the same number of oranges as Florida. It furnishes the bulk of the supplies to the European market and when the Florida grower talks of enlarging his market by invading Europe, it will pay to first study the Spanish situation.

According to a treatise prepared by experts of the United States department of agriculture, Spain would be a hard competitor to eliminate or even meet in Europe in the orange market, although its methods in culture and shipping are extremely crude and wasteful.

The southern coast of Spain for a distance of 220 miles is given over to orange culture lately, the report states and the area planted could be greatly enlarged if the demand warranted. In fact the past few years have seen large plantings and some fear is felt for the future of the industry when all trees now planted are in full bearing.

The cultural methods should be interesting to the Florida grower in that they show methods that were in use probably when Columbus sailed from Spain and landed near the coast of Florida. The soil is given as clay loam but porous enough to readily absorb water without baking. It is fairly rich and no fertilizer has been used except manure until recent years when rising prices stimulated production to the utmost. The orange groves are interspersed with grain, vegetables and grazing fields.

The trees are set from 16 to 20 feet apart. A great deal of pruning is done to prevent the trees from growing tall—a low compact head is preferred. It is said that no groves of big trees such as are seen in either California or Florida are found there. Mature groves produce from 500 to 1000 fruit to the tree. The fruit is smaller than the average in California or Florida. The several varieties are divided into three main groups, one ripening in the early winter, another in the late winter, and the third in the late spring. The Spanish orange is said to be tender and sweet and when completely ripe equal in flavor to either that of California or Florida.

Cultivation is of the crudest kind, being largely done by hand, turning the ground over with a mattock during the dry season. A crude crooked-stick tool drawn by one animal is the only power machinery used in cultivating and this but seldom due to the closeness in which the trees are planted.

The crop is practically all sold on the tree by the grower before the season opens. He gets cash payment then and the balance when the fruit is moved. The usual unit in buying is the 1,000 oranges, counting them over by hand by the buyer and seller or their representatives.

Most of the fruit is shipped to the north Europe ports by water and distributed over the country. The big broker of the European cities takes the fruit at the ship's side and pays the cost of distribution.

European Grapefruit Markets May Be Expanded

Present indications are that Europe may absorb as many American and Canadian apples this year as last, reports Edwin Smith, foreign market specialist of the Department of Agriculture, who just returned from abroad. While it is true that the English apple crop is better both as to quantity and quality than in 1924, yet it is scarcely more than half a full crop and the varieties that show the best promise are cooking varieties. The continental crop is very short and will scarcely be a factor in the deal. In every European country the pear crop is one of the smallest on record. No doubt pear prices will be sufficiently high to attract some of the harder American varieties.

Germany will start taking volumes of American apples earlier than last year if the market is handled judiciously, Mr. Smith advises, will take steady consignments in greater total volume than in 1924. A heavy crop of apples in Nova Scotia will somewhat offset Virginia's shortage, while in the boxed apple deal British Columbia's reduced crop will ease up on the competition with our Pacific Coast States.

An intimate association with the fruit markets of Europe over a period of nine months has given Mr. Smith a vivid impression of the relative greater importance of the commerce in fresh fruits and vegetables in the United States over this phase of commerce in the Old World.

This, he says is not because the peoples of the Old World like fruit less but is directly traceable to our placing perishables before our consumers in a fresher and more edible state during longer marketing seasons throughout the year.

"Scientific methods of production, standardized grades and packages, conservation through handling and refrigeration and a degree of marketing efficiency that returns fruit and vegetable growers a margin of profit are the real reasons why American consumers have a greater assortment of fresh fruits and vegetables continually before them and why they are greater consumers of this type of food than are the people of Europe.

"If strawberries are on the English market in abundance for only one

month whereas they are plentiful on the New York market for three months, it is not because the English people like strawberries less than New Yorkers, but because growing this fruit in Southern France or Spain and its refrigerated transportation have not been adapted to a potential demand.

"It has been our willingness to standardize our producing and transportation methods and facilities to meet potential demands that has made a place for our fruit in European markets and will continue to open up new markets to us even though possibilities for growing just as good fruit are lying dormant in many parts of Europe itself.

"After seeing our apples arriving in Europe during an entire marketing season, and having a full realization of all the inferior fruit that reaches the European consumer, it is a wonder to me that we market as much abroad as we do. By still improving the quality of our fruit to the foreign retailer and consumer, I am certain that we will experience an increased demand with an amplified popularity."

What American apple growers must work for in expanding their markets abroad, according to Mr. Smith, are: Constant and adequate supplies; less waste and lower costs to the consumer; and better quality upon arrival.

One of the topics of conversation among members of the fruit trade in Great Britain relates to the tremendous strides made during the past year by grapefruit in the British Isles. It jumped from one of the rare exotic fruits seen only in large centers to a regular article of trade, stocked by all progressive wholesalers and most retailers. Mr. Smith points out that were American producers to get behind it with a continuous educational program, it seems certain that grapefruit might be absorbed in European markets in large quantities. At present only a few people know what the fruit is or how it should be eaten.

"The economic situation remains unchanged. But little difference can be seen between the different countries when it comes to the buying power of the working people. Compared to Americans they all receive

niggardly wages. Unemployment is possibly worse in England than in any other country. The subvention voted by the British parliament to reimburse the coal mine owners against loss at the present rate of pay to the miners has postponed the strike that was due to begin August 1. The general feeling is that this will bolster up the coal industry for the next several months, though a permanent solution has by no means been reached."

SOUTH AFRICAN

FRUIT EXPORTS

The export of South African fruit has been badly managed this year (1925) states Mr. J. P. Moffitt, American Consul, at Cape Town, South Africa, in a report received in the Department of Commerce. There consequently has been an overloading of the small refrigeration space at the docks and the delay and spoiling of large shipments of fruit.

The situation has given rise to considerable public criticism, which has resulted in the introduction in Parliament (South Africa) of a bill to control fruit shipments from South Africa. The bill was introduced by the Minister of Railways and Harbors, and will probably become a law states Mr. Moffitt.

An arrangement has existed by which members of a private fruit exchange, having a very large membership, inform the exchange of their commitment and the space required. The exchange also offers its service to fruit shippers not members. At the beginning of the season, an attempt is made to reserve space on estimates received from members of the exchange. The exchange does not, however, actually buy the space or guarantee a certain amount of cargo so that the shipping companies are at liberty to do as they see fit with reference to allotting space. Under these circumstances, great difficulty is experienced by the officers of exchange in securing space from the shipping companies, their task was made more difficult this year as estimates of space required were quite inaccurate.

The fruit Control Bill just introduced proposes to make up for the deficiencies of the present system of handling exports through the private exchange.

South African Export Control Act

Mr. E. E. Sullivan, Assistant Trade Commissioner at Johannesburg, South Africa, recently forwarded to the Department of Commerce a clipping from the "Union Gazette Extraordinary" of May 27, 1925, covering the South African Fruit Export Control Act. Mr. Sullivan states that the Control Board mentioned in the Act has been appointed and is now functioning though the Board is not expected to have much influence upon this season's (1925) shipments due to the fact that it must first organize its various activities.

The following is a copy of the Act:

"Act — To provide for the control of the export of fruit from the Union and of the shipment of fruit at Union ports.

"Be it enacted by the King's Most Excellent Majesty, the Senate, and the House of Assembly of the Union of South Africa, as follows:

"1. (1) There shall be established at Cape Town at a date to be notified by the Governor-General in the Gazette, a Fruit Export Control Board—hereinafter called the Board—which shall consist of such number of members as the Governor-General may think fit, one of whom shall be designated by the Governor-General as Chairman.

(2) The Chairman and other members of the Board shall be appointed by the Governor-General for such period, and upon such conditions as the Governor-General may, at the time of appointment determine.

"2. (1) It shall be the function and duty of the Board, subject to the provisions of this Act and the Regulations—

(a) To control the export of fruit from the Union and the order of shipment of fruit at all ports of the Union:

(b) To call for and receive from fruit producers estimates and other particulars of their intended exports;

(c) To call for and receive from ship owners or their representatives information respecting the amount of space available on any ship appointed to call at any port of the Union; and

(d) To perform such other functions in respect of the export and shipment of fruit from the Union as may be prescribed by Regulation.

(2) The Board may, with the approval of the Minister, take such steps as it may deem expedient and practicable to equalize the rates of freight payable by exporters of fruit from any port of the Union during a particular period and to make all necessary arrangements for the payment of such rates by exporters.

"3. (1) To facilitate the proper carrying out of the functions of the Board the Minister may, at any port of the Union except Cape Town, appoint a committee of not more than three persons (hereinafter called a committee) whose duty it shall be to carry out at that port the general or particular instructions of the Board.

(2) The members of a committee shall be appointed by the Minister for such period and upon such conditions as the Minister may at the time of appointment determine.

(3) At any port of the Union other than Cape Town at which a committee is not appointed, and at any place within the Union at which fruit is exported overland, the Minister may appoint an officer who shall, subject to any limitation imposed by the Board with the approval of the Minister, have all the power of a committee.

"4. Any member of the Board of a Committee, and any officer appointed under sub-section (3) of section three who, save for the purposes of this Act or on the order of a court, discloses any information obtained from estimates or particulars received under paragraph (b) of sub-section (1) of section two shall be guilty of an offense and liable on conviction to a fine not exceeding fifty pounds.

"5. (1) From and after the commencement of this Act no person shall export or ship fruit from the Union save under contract or other arrangement made by, through, or with the consent of the Fruit growers' Cooperative Exchange of South Africa, Ltd., (hereinafter called the Exchange) and approved and authorized by the Board.

(2) No contract made by any persons before the commencement of this Act for the export or shipment of fruit from the Union shall be of any force or effect unless such contract shall have been made by, or with the consent of the Exchange and shall be approved and authorized by

the Board.

(3) In the event of the refusal of the Exchange to consent to any contract or arrangement for the export of fruit, there shall be an appeal from its decision to the Board, whose decision in the matter shall be final.

(4) Any person who after the commencement of this Act exports any fruit, or makes or is a party to the making of any contract, in contravention of this section shall be guilty of an offense and liable on conviction to a fine not exceeding one hundred pounds.

"6. The central board of the Land and Agricultural Bank of South Africa may, on such terms and conditions as it shall prescribe, guarantee the performance by the Exchange of any contract entered into by it with any shipowner or his representative for the shipment of fruit.

"7. In the event of the dissolution of the Exchange, all powers and authority conferred upon it by this Act or any regulation thereunder shall devolve upon such representative association of fruitgrowers as may be nominated by the Governor-General and notified by proclamation in the Gazette.

"8. Notwithstanding anything contained in section five of the Agricultural Products Grading Act, 1922 (Act No. 16 of 1922), the Exchange, out of any moneys received by it under section four of the said Act—

(a) Shall pay members of the Board and of committees at such times as the Minister may direct any allowances prescribed for such members by regulation under this Act; and

(b) May, with the approval of the Minister, defray any expenditures occasioned to it in the exercise under this Act.

"9. No legal liability shall attach to the Government, the Board, or a committee or officer for any loss or damage occasioned to any person arising out of the bona fide performance by the Board, a committee or officer of any function or duty under this Act or the regulations thereunder whether negligently or otherwise.

"10. (1) The Governor-General may make regulations, not inconsistent with this Act, as to—

Continued on page 18

Fruit Trees and Fertilizers

By Prof. George A. Olson, Horticulturist, The Gypsum Industries

Farmers know by experience that the pruning of trees and the thinning of fruit aid in the development of healthy and sturdy trees and, simultaneously these practices result in the production of sound merchantable fruit with minimum amount of culls.

Unquestionably pruning of the trees forces the flow of the sap toward the fruit buds and thinning of the fruit economizes on the supply of plant food in the sap. Pruning therefore may be regarded as a means of increasing the flow of sap in the direction of the fruit buds or fruit. Thinning of fruit is necessary because the sap does not as a rule carry an oversupply of the essential elements.

The difference noted in the bearing or shedding of fruit indicates variations in supply of plant food. Lopsided fruit is another indication. More striking evidences are the variations in form and quality of the fruit in spite of the resemblance as for example the variation which one delicious apple bears to another. Chemical analyses also reveal striking differences in the species.

The climate is recognized as an important factor and so is the kind and quality of the plant food available for tree use. The concentration of the essential elements in the soil solution also influence the concentration of the sap. The substances entering into solution in the soil and the sap do not however necessarily represent the proportions of plant food which are best suited for the development of the tree and fruit.

That concentration of plant food in the soil is important is determined from experiments which show that the growth of young trees is not as pronounced in weak plant food solutions as in case of the more concentrated ones. For these studies it was necessary to use salts of elements such as sodium, potassium, calcium, magnesium, manganese, iron, nitrogen, sulphur and phosphorus.

As the concentration of the plant food solution increases a point is reached which favors maximum growth. Beyond this point of concentration no material benefit is derived. The mineral content of the trees increases with the concentration and shows that the minerals are more concentrated in the sap. It is also of interest to know that the higher con-

centrations reduced the amount of water required to satisfy the tree needs. In other words, there is less water escaping from the leaves. The fact that there are no further increases in the mineral content in the trees growing in the highest concentrations plainly shows that the requirements of the trees are satisfied.

The feeding of weak solutions to the trees shows how a starving tree will try to maintain itself. This is best observed in the composition of the leaves. Calcium is appropriated in lieu of potassium in the trees growing in the weakest solutions. As the concentration of the solution increases the calcium appropriated decreases and the potassium increases. Sodium also increases in quantity with the increased strength of solution. There is obviously a relationship which these and other elements bear to one another to promote the most satisfactory growth and when this relationship does not exist the trees fail to do their best.

The application of fertilizers in the orchard tends to increase the concentration of the soil solution and also that of the sap. A soil solution having an unbalanced food supply may prove as ineffective as no treatment because the element which is likely to be most needed is not present in adequate quantities. Further, the plant foods applied may prove more favorable for the production of wood than for production of fruit. In case the soil is abundantly supplied with the kind of elements applied, the trees will continue to starve but will adapt themselves to the conditions as best they can.

The composition of the leaves also reveals the fact that the plants must be as adequately supplied with sulphate sulphur as with phosphoric acid. In fact calcium sulphate (agricultural gypsum) stands out more prominently than phosphorus in trees which are grown in soils of low concentration. Agricultural gypsum aids in liberating a part of the large amounts of the potassium stored in the soils and thereby assist in supplying the trees their required amount of potassium. These statements do not minimize the importance of nitrogen, phosphorus, and other elements. On the contrary all of them are essential and these facts should always be kept in mind. The main object is to keep up the production of fruit of high quality.

This can be best accomplished through the use of those elements which are most needed by the plants.

PORTO RICO TO SHIP MORE GRAPEFRUIT AND PINEAPPLES

Shipments of Porto Rico grapefruit for the year ending June 30, 1926, are expected to exceed the 580,000 boxes sent out during the preceding 12 months, according to H. C. Henrickson of the Porto Rico Experiment Station. Pineapples are also expected to exceed the 343,000 boxes shipped last year.

Grapefruit bloomed heavily during June and July and a large percentage of the fruit has set. With favorable weather, therefore, and with prices ranging between \$4 and \$5 per box, shipments for the period May 1 to November 1, 1925, should be fully 150,000 boxes. Midseason shipments (November 1 to January 1) should reach 400,000 to 500,000 boxes. Excessively rainy weather, however, and lowered prices resulting from heavy supplies from other sources would materially reduce those figures. It is pointed out that 1924-25 shipments would have been much better, and much smaller had the late season prices not been so extraordinarily good.

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Palestine Oranges 1924-1925

The greater portion of Palestine oranges grow in the Jaffa (Palestine) District, and the remainder on the coastal plain lying immediately south and north of such district, states Mr. Oscar S. Heizer, American Consul, at Jerusalem, Palestine, in a report received in the Department of Commerce. Palestine oranges are known to the trade as Jaffa oranges; about 99 per cent of the crop belong to such variety and the remaining 1 per cent to Valencia and other imported orange stocks, adds Mr. Heizer.

Figures furnished by the Department of Agriculture of the Government of Palestine indicate that there are approximately 6,818 acres in Palestine in orange groves. It is estimated by the Department that 200 acres more will be planted to oranges during 1925; in addition, there are about 1,000 acres of young plantings not yet producing.

The trade estimates that there will be about 2,000,000 cases of Jaffa oranges from the 1925 crop but it will not be possible to estimate the total crop until April export figures are available states Mr. Heizer. The exports between October, 1924, and March, 1925 amounted to 1,733,007 cases valued at \$2,316,050. Taking April (1925) figures into consideration, the present year's exports will establish a record in the orange trade of Palestine. Home consumption of oranges did not exceed 110,000 cases—about the same as previous years. The exports for previous years are reported as 1,365,543 cases for 1922-1923, valued at \$2,077,015; and 1,589,331 cases for 1923-1924, valued at \$2,103,960.

Most of the Jaffa orange exports go to the United Kingdom with some to Egypt and other countries. The shipment of oranges to Egypt begins in October, and early in November the European shipments start, lasting until the end of April. The present season's first shipment to the United Kingdom was on November 11, 1924. The heaviest orange shipments are between January and March. The following are approximate figures of 1924-1925 orange exports, obtained by Mr. Heizer from semi-official sources:

To the United Kingdom 1,387,077 cs.
Egypt 290,000 cs.
Roumania, Bulgaria, Holland, and the Scandinavian countries * 50,000 cs.

Russia 6,000 cs.
Total 1,733,07 cs.
(Value \$2,316,050)

*(Consignments have been sent to the Scandinavian countries by transshipment via Hull.)

There is no carryover from one year to another because of lack of storage facilities and the more important fact that during normal seasons the best prices are usually secured abroad for late shipments.

Early crop reports on Jaffa oranges are easily available in Jerusalem in June and July, over three months before the exporting season starts.

Due to a severe frost and comparative lack of rain, following hot winds, the quality of the 1924-1925 season's orange crop deteriorated so that late shipments of February and March reached their destination rather dry. This dry condition of the oranges was reflected in the drop in prices on the English market during March. The price position was further aggravated states Mr. Heizer, by shippers who, anxious to forward available crops, shipped excessively, with the result that the English market was unable for some time to absorb arriving consignments. Another contributory cause to low prices was the cool weather in England which reduced consumption of oranges. In addition large supplies of Spanish oranges were also available in England at that time. A short survey of price fluctuations and the attendant circumstances follows:

Early November sales in England, sent in transit via Egypt, realized an average of 15 shillings (approximately \$3.60) a case. The first portion of the second shipment on November 13 (1924) brought, at Liverpool, from 12 to 14 shillings (\$2.88 to \$3.36) a case, for Grade I fruit.

Prices in December ruled between 12 and 13 shillings (\$2.88 to \$3.12) a case, though as little as 5 to 9 shillings (\$1.20 to \$2.16) a case was obtained for certain grades at Liverpool. Prices in Egypt were low, ranging from approximately \$40 to \$45 a ton.

Prices in January ranged between 13 and 14 shillings (\$3.12 to \$3.36) a case for Grade I fruit, and 12 to 13 shillings (\$2.88 to \$3.12) a case for Grade II oranges.

Prices rose considerably in February on the English market, reaching as high as 22 shillings 6 pence (\$5.40) a case for 250's, Grade I. An

average of 15 shillings (\$3.60) a case was obtained at later sales. A contributory cause to this rise in prices was the bad condition in which Spanish fruit arrived in England. Early in February, prices in Egypt rose to as high as approximately \$70 a ton, at Alexandria; excessive shipments spoiled this market, however, and the price dropped to approximately \$47.50 a ton.

As already outlined, there was a drop in prices on the English market during March, due to dry condition of Jaffa oranges, etc. Prices dropped from an average of 18 and 15 shillings (\$4.32 and \$3.60) a case to 11 and 10 shillings (\$2.64 and \$2.40) a case. The Egyptian market improved slightly at the beginning of March, approximately \$70 a ton being obtained. (Note: In the foregoing statements, the prices given in American currency, should all be considered as approximate).

As most of the Jaffa oranges go to the United Kingdom, prices have been given in shillings per case, states Mr. Heizer. Sales in Egypt and certain other countries are made in Egyptian currency, which is that used in Palestine.

The Egyptian pound on May 12, 1925, was worth approximately \$4.97. Quotations for oranges are made by the ton in Egypt.

With reference to packing Jaffa oranges range between 136 to 152 a case for average large oranges, and 240 to 250 a case for smaller oranges. The most common packings are 136, 144, 136-144, 144-152, 240-250, and 250 per case.

In addition to the foregoing report by Mr. Heizer, the Fruit-Grower (of London), April 9, 1925, contains an article on Jaffa oranges, from which the following excerpts have been made.

"During a conversation with Mr. D. Yoshpe, of Messrs. A. Yoshpe & Son, Henrietta street, Covent Garden, a representative of the Fruit-Grower gleaned some interesting information respecting the Jaffa orange.

"The Arabs were the first people to grow the Jaffa orange for export, but in picking they adopted the old method of twisting the orange from the stem. There are now people who remember how they used to pack the Jaffas in boxes without paper and then send to the nearest ports as quickly as possible. But a few of them noticed the resistance of this

Continued on page 16

Skinner Machinery Company to Move Plant

Announcement is made that the Skinner Machinery Company, the world's largest manufactory of fruit and vegetable packing equipment, is about to move its plant from Dunedin Florida, to Haines City, Florida. It is expected that the change of location will be made about December 1, or as soon as the plant can be erected and housing accommodations for the workmen supplied.

The change of location is made to facilitate the shipment to packing houses from a point centrally located in the citrus belt and Haines City was selected by reason of its central location and its excellent shipping and mailing facilities. It is the belief of officials of the Skinner Machinery Company that the new location will aid materially in hastening delivery of supplies to packing houses and in other ways facilitate the transaction of business.

Speaking of the decision to move

the plant from Dunedin to Haines City, Mr. B. C. Skinner, President and General Manager of the Skinner Machinery Company, in an interview with The Citrus Industry said:

"The Skinner Machinery Company has been located at Dunedin since its small beginning—when it was nothing but a shop, about 20 ft. by 40 ft., making nothing but the Skinner Washer. The gradual growth with us has been such that now the volume is close to a million dollars worth of goods per year.

"With this added volume, the cost of addition freight, not only to us but also to the citrus industry of Florida, is excessive in our present location. Furthermore the service we render our customers is not what it should be when it takes three days for our replies to reach them.

"In our new location at Haines City, we will be within six hours of practically 90 per cent of the citrus

packing houses in Florida by freight and mail will reach them in much less time than that.

"The further consideration in the removal of the plant was of course the fact that the land on which our present plant is located is in the heart of the town of Dunedin and some move would shortly be necessary in any case, and we thought it best while moving not only to move away from the center of the city but also to move to another city which has good railroad facilities, in the heart of the best citrus section of the state. Haines City is peculiarly situated with reference to the citrus industry and really the location could not be improved upon.

"We feel that with this change we will be able to give very much better service to our customers and thereby merit an even larger proportion of their business."

FUNNELL MADE ASSISTANT HORTICULTURIST AT STATE COLLEGE OF AGRICULTURE

A. Martin Funnell has been selected as assistant horticulturist of the College of Agriculture, and assumed his duties August 1. He takes charge of the new greenhouse completed last spring, the lath houses, cold frames and the horticultural grounds near them.

In addition to growing ornamentals he will superintend the planting, cultivating, pruning and training of nursery stock used for class instruction and the growing of vegetables for instruction and supplying the dining hall.

Mr. Funnell is the son of a florist of Huntington, N. Y. He graduated from Cornell University in June, and took work under Edward W. White and Professor H. H. Nehrling of the Department of Floriculture at Cornell, who speak highly of his accomplishments.

PALESTINE ORANGES 1924-1925

Continued from page 15
particular orange and they learned new ways. They then started to pack them in paper and in uniform boxes. It is well known that the natives do work by sitting on the ground with their legs underneath them (otherwise, squatting), and in the same way they pack the oranges. The oranges are now picked with very sharp

secateurs, but, unfortunately, on many occasions the fruit is cut as well. The oranges are carried on the heads of women from the grove to the packing sheds. The ground of the sheds is covered with straw mats, and two girls empty the baskets and stack the oranges in piles about 2 feet high. This fruit remains for two or three days untouched, until the signs of snips and bruises are well noticed. Then the packers come into action.

"Oranges are always picked after the dew has evaporated, and the pickers work for from 5 to 6 hours a day, starting about 11 a. m. Two graders take out the very visibly damaged oranges. Then come another two graders who throw out again those which cannot be shipped to market. Then there is another man who controls the action of the four graders. He is the most responsible man, and has years and years of experience in this particular business. Two boys wrap the oranges and another man packs them, getting through about 150 to 200 boxes in an eight-hour day. Finally, one man makes the boxes and nails them up. They are transported to Port Said by the new railway recently built by the British Government, and shipped to all ports. In the early days, all cargoes were consigned to Liverpool, which has been called the "Home of Jaffas", because there was not sufficient quantity produced to justify sending to

other ports, but now London has direct shipments."

SUB-EXCHANGE ELECTS

For the fifth consecutive time, Henry Merrill, prominent citrus grower of Merrit Island, was elected president of the Indian River Citrus Sub-Exchange at the annual election of officers held at the office of the organization in Cocoa recently. Mr. Merrill has worked in the past with the Citrus Exchange to such an advantage that he is recognized as one of the most well posted men in the state on the citrus industry. It has been through his unflinching work that that the Indian River Sub-Exchange has been able to make the headway it has.

H. G. Putnam, of Oak Hill, was elected vice-president of the Indian River Sub-Exchange, while H. H. Kellerman was voted a director and the representative from the board to the Tampa board. Homer Needles, of Ft. Pierce, was also elected a director.

Poor pay and poor housing are often responsible for a farm labor shortage.

The man who does the most seems always to have the most time to do something more. The busy man always has time.

ANNUAL REPORT OF L. M. RHODES, COMMISSIONER, FLORIDA
STATE MARKETING BUREAU

Total shipments of Fruits and Vegetables from Florida during the shipping season from September 1, 1924 to July 30, 1925 inclusive. All rail, boat and express shipments are included. The total volume of perishables shipped from the State amounts to 94,125 carloads. By commodities:

Oranges	26,209	carloads
Grapefruit	20,814	"
Mixed Citrus	4,442	"
Tangerines	1,789	"
Pineapples	318	"
Peaches	4	"
Strawberries	883	"
Cantaloupes	9	"
Watermelons	6,668	"
Celery	8,143	"
Potatoes	7,634	"
Potatoes, Irish	5,054	"
Cucumbers	2,087	"
Beans	2,197	"
Cabbage	1,898	"
Lettuce	1,561	"
Peppers	1,209	"
Mixed Vegetables	3,206	"
Total	94,125	"

Citrus Fruits by Counties:

	Oranges	Grapefruit	Tangerines	Mixed Citrus	Total
Alachua	167	7	3	14	191
Brevard	852	569	3	397	1821
Broward	4	53	0	1	58
Charlotte	27	23	1	0	51
Citrus	41	1	0	0	42
Dade	6	1355	4	0	1365
DeSoto	1123	514	154	276	2067
Flagler	1	0	0	11	12
Glades	4	0	0	0	4
Hardee	1038	141	28	535	1742
Hernando	276	101	12	11	400
Highlands	298	538	36	23	895
Hillsborough	2098	292	41	260	2691
Lake	3499	1034	116	242	4891
Lee	221	735	22	182	1160
Manatee	600	1504	63	27	2194
Marion	1125	276	93	11	1505
Monroe	21	2	2	41	66
Okeechobee	21	20	2	41	66
Orange	4835	1535	342	549	7261
Osceola	211	94	33	136	480
Palm Beach	503	540	9	93	1136
Pasco	394	170	7	31	602
Pinellas	745	2346	42	359	3492
Polk	4597	7202	351	728	12878
Putnam	919	94	41	83	1137
St. Johns	21	1	1	1	24
St. Lucie	204	1282	103	286	1875
Sarasota	33	117	1	5	156
Seminole	626	57	29	173	885
Sumter	127	8	7	8	150
Volusia	1593	204	251	1	2049
Totals	26209	20814	1789	4442	53254

Vegetables by Counties unavailable.

GOOD MARKET SEEN

FOR FLORIDA FRUIT

That the Florida citrus crop will have a good market during the coming season is the expressed opinion of G. E. James, of Orlando, one of the buyers of the largest fruit crops in Central Florida. Mr. James has just returned from an extensive trip through the northern citrus markets and has made a thorough survey of the conditions surrounding the citrus market.

He stated that the orange and the grapefruit markets will be better this coming season than they were last season. He anticipates a price of two dollars per box on the trees. The Tangerine crop in Florida, he states will be poor this year and will thus

command a good price on the northern markets.

Everyone in the north and east are interested in Florida, says Mr. James. An example of this interest is that fifteen minutes after he registered

at the hotel in Baltimore four different persons had sought information from him regarding Florida.

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Real Estate Boom Also Boost to Citrus Industry

"It is the opinion of many persons that the big real estate boom in Florida will kill the state as a fruit producing country but it has had quite the opposite effect according to A. B. Michael, Regional Director of the American Fruit Growers, of Wabasso, Fla., who is at the Hotel Astor in New York.

"The boom has helped the citrus situation," declared Mr. Michael. "The orange industry was profitable during the war and until 1923-24 when we got up to 22,000,000 boxes shipped from the state, which was a little over production and the prices were low. With the prospect of more people going into the industry it made the prospects look squally. With so many, however, getting into the real estate business, some of the groves were cut up and others who had been discouraged by the low prices paid less attention to their

groves, with the result that the fruit crop was shorter. This year we will not have more than 15,000,000 or 16,000,000 boxes, though this is partly due to weather conditions, but it will get production and consumption nearer together and bring the prices back again.

"It is wonderful to see the results of the land boom. In Miami a few days ago the crowds were almost like Broadway in your city, and everybody trying to get real estate. Of course this big boom will gradually slow down, but the state is going to have a faster and bigger development than it has ever had—for the boom has brought so many thousands of people into the state.

"Many of the big millionaires who have come down from the north are doing wonders for Florida because they are spending vast sums of money putting in streets, sewers,

water, and other improvements and planting quantities of cocoanut and royal palms and other tropical trees and shrubs, which beautify the place and which make real values. At the same time the gambling element has been lured there and unfortunately some are getting flat lands and selling to gullible people, sending prices too high too fast—and to this there must be some kick back—but at least 80 per cent of the boom is good substantial growth and entitled to go on. Things may slow up but we will then get on a real foundation but I believe that land around Coral Gables, Miami Beach, Vero Beach, Boca Ratone, Palm Beach and Fort Pierce, all south of the frost belt, are worth the prices asked because the money has already been spent in development to make the values."

SOUTH-AFRICAN FRUIT EXPORT-CONTROL ACT

Continued from page 13

(a) Any functions imposed on the Board under paragraph (d) sub-section (1) of section two;

(b) The meetings of the Board and of committees and the procedure thereat;

(c) The duties of committees and officers and the relations of committees and officers with the Board;

(d) The allowances to be paid to members of the Board or of committees.

(e) The forms of estimates to be rendered by producers to the Board and the manner in which such estimates may be called for by or shall be submitted to the Board, and generally for the better carrying out of the purposes of this Act.

(2) The regulations may prescribe a penalty not exceeding a fine of fifty pounds for any contravention thereof, and if, in respect to any consignment of fruit for export the producer has not, in terms of the regulations or of any request of the Board, furnished to the Board estimates thereof, or has failed to comply with any other lawful requirement, the Board may refuse to grant in respect of such consignment any priority of shipment to which under the regulations or by reason of priority of arrival at the port of shipment it may be entitled.

"1. Nothing in this Act shall apply

to the export of fruit to and for consumption in Rhodesia, the Bechuanaland Protectorate, Basutoland, Swaziland, the Mandated Territory of South-West Africa, or the Belgian Congo.

"12. In this Act unless inconsistent with the context—

'fruit' means all fruit other than dried or preserved fruit.

'Minister' means the Minister of Railways and Harbors or any other Minister lawfully acting for him.

"13. This Act may for all purposes be cited as the Fruit Export Control Act, 1925."

National Fruit Growers' Association of South Africa

In a report to the Department of Commerce, Mr. F. E. Sullivan, Assistant Trade Commissioner, at Johannesburg, South Africa, states that a meeting attended by persons representing over 3,000,000 lbs. sterling held recently in Johannesburg to confirm the constitution of the new National Fruit Growers' Association of South Africa. The constitution provides that the Association is not to engage in trading operations and is based on and framed along the lines of the constitutions of Chambers of Commerce.

CITRUS GROVES YIELD PROFITS FOR HARD WORK

"Citrus growing in the southeast," says a bulletin, prepared by the Unit-

ed States Department of Agriculture, "far from the market centers, is a specialized complex business in which the operator, to be successful, must have foresight, abundant energy and a belief in his work. To these he must add a personal interest and constant attention to details. Growers who neglect their orchards learn that they are operating at a loss, but those who give sufficient food, water and work have reason to expect balances to be on the right side of the ledger."

Various phases of improved practices have been discussed and experimented on by the growers of citrus fruits, concerning the most successful methods of conducting some of the Fundamental problems of the business.

"The recent rapid growth of the industry," says the department, "has been made possible by the utilization of the results of scientific research along many lines. New methods of propagation, orchard development, frost protection, pest control, and handling and transporting the crop have been originated and introduced, which have not only made possible the profitable production and marketing of citrus fruits in the southeast, but have also been found fundamentally important in the production and marketing of other fruit crops throughout the country."

When writing advertisers please mention The Citrus Industry.

THE RELATION BETWEEN QUALITY PRODUCTION, A STANDARD PACK, AND THE HIGH DOLLAR

Continued from page 7

makes the purchaser willing to pay full value but makes it possible for him safely to do so.

We must get entirely away from any attempt "to put anything over" on the dealer or the consumer. We must learn to judge the merits of our product without prejudice. We must get to the point where we can put a cull or inferior fruit where it belongs without a pain, or in fact to the point where it gives us pain not to do so. Whenever we learn to produce high average quality, both inside quality and outward appearance, and to combine therewith a strictly honest grade and pack, carefully standardized on a high plane, then we shall approach the full measure of our market possibilities.

There is enough in this idea of superior quality and pack to induce any wide awake grower to make the most of it from a purely selfish motive. But a broader and worthier consideration has to do with the consequence to the entire industry of the State if every grower of perishables would bring himself to be vitally interested in this matter.

It certainly costs almost as much to produce an inferior product as one of superior quality. It costs as much to harvest it; as much to pack it; as much freight; and as much to sell it. But it will not bring as much return. Every time a grower sends to the market an inferior package, when by a proper effort it could have been better in quality or packing, he suffers a distinct loss for which he alone is to blame. But worse than that he is deadening the market, not only

THE CITRUS INDUSTRY

at the immediate time but for the future, which the same product of better character would have served to stimulate and broaden.

This touches upon the central idea that I would fix in your minds. I have said that there does not appear an immediate danger of permanent over-production in Florida, provided the situation be intelligently handled by all parties concerned; and I think that now my point will be plain. I want to emphasize the importance of quality and pack in meeting the future.

Undoubtedly the market for Florida products will have to be greatly developed in the future. The possibilities of the existing market have not been exhausted. The surest way of making the most of the market we have and of best developing the possibilities of the future, is to improve the average quality of our products and the manner in which we send them to the markets.

A fine article properly presented sells itself. We ought to send to the dealer and consumer a product of such quality, both from the standpoint of inherent merit, appearance and attractive dress, that it will stimulate a demand for itself. Such a product develops and broadens its own market. My motto would be "meet any threat of over-production by quality production". The possibilities would seem to be almost unlimited.

To my mind no other thing can be an effective substitute in accomplishing this. Neither advertising nor selling service alone can do it, nor can they together completely meet the situation. Both are splendid and effective instruments, but must be given a fair chance and in the end can only be aids to intrinsic merit.

Nineteen

Inherent high quality and a standard of packing properly commensurate therewith, are the foundations
Continued on page 26

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Pedigrees for Citrus Varieties

In connection with the rapid expansion of orange and grapefruit growing in Florida and Satsuma orange growing in the other Gulf States, the need has become apparent for growing better fruit rather than additional supplies of ordinary and often mediocre fruit. Normal increase in production should be brought about by securing greater yields per acre rather than by the haphazard planting of new acreage, particularly of untested varieties or unselected strains of old varieties. To meet this need bud selection of standard varieties offers one means of standardizing and stabilizing the citrus industry.

Some years ago the Bureau of Plant Industry investigators working in this field developed a system of individual tree performance records to discover grove trees producing uniformly large crops of fine quality, as well as to locate and eliminate non-productive or "drone" trees. The pioneer work along this line was carried out in California and the results were so striking that for several years past the new plantings in that State have been made exclusively from "pedigreed" nursery stock, each new tree having a known parent tree in good production.

Similar work is now being extended to Florida in cooperation with the Florida State Experiment Station and to Alabama in cooperation with some of the leading nurserymen and growers. At the Lake Alfred Experiment Station in Florida is being developed a "progeny grove," each row or block of which is propagated from a single selected parent tree of one of the standard citrus varieties. The selected parent trees have been under observation for a term of years, with yield and fruit characteristics care-

fully recorded, and several such selected parent trees of each variety are represented by separate "progenies" in the progeny grove. Thus, after these "progenies" have been tested side by side under uniform treatment for yield, vigor of growth, fruit quality, and adherence to type, a final selection of the best strain of that variety will be made to serve as a basis for future propagation. A "proven progeny" will then mean that all the trees budded from a single parent tree not only produce abundantly, but that the fruit is true to type and free from the tendency to "sporting" or the production of offtypes so frequently encountered in trees of unknown parentage. To perpetuate desired uniformity of fruit type it is recognized as important that the bud wood used for propagation shall be taken only from fruiting twigs, avoiding sprout wood and vegetative branches so often resorted to in common nursery practice to furnish propagating material. The final disposition of bud wood produced under this progeny-grove plan will be handled as a public-service project under the control of the State experiment station with the view to furnishing growers and nurserymen with dependable propagating material and eliminate the large waste of time and money that has gone into planting and caring for trees that are predestined to be unprofitable.

The citrus growers of Florida, through the agency of the State horticultural society, have adopted a list of approved varieties and laid down certain requirements which new variety must measure up to before it can receive consideration for inclusion in this list. Only such approved varieties are being "pedigreed" in the present progeny project, and it

is unlikely that any new varieties will be included unless their merits are proven so preeminent as to definitely supplant one of the older approved varieties. Too many varieties has been one of the chief handicaps of the Florida citrus crop in years past.

AN OMISSION

In the article in the August number of The Citrus Industry by Mr. Albert O. Kay entitled "Soil Moisture Studies in Relation to Diseased Tree Conditions in Brevard County," an omission was made which changed the sense of one sentence in the article. This omission occurred at the beginning of line 20 in the second column on page 22. This sentence as it should have appeared is as follows:

"That you may further understand the importance and significance of the moisture equivalent of a soil it may be stated that if two different soils having different values are moistened just to the moisture equivalent, and placed in contact, there will be no movement of moisture from one to the other even though the moisture content of one soil is 10 percent greater than that of the other."

A United States Army report says that there are not more than 500 veterinary students in the country. This means that there will be less than three per state graduate for the next four years, and the authorities believe that this number is inadequate to care for the increasing veterinary needs.

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Making Whitewashes That Will "Stay Put"

Whitewash has many valuable uses around the farm home, fences, chicken yards and barns. One of the most serious troubles with it in the past has been to get one that will stick for a long time. Following are two mixtures that are good stickers.

A good mixture, durable, white, and easily prepared is recommended by the National Lime Association. It is made as follows:

Soak 5 pounds of casein in about 2 gallons of warm or hot water until thoroughly softened (about two hours). Dissolve 3 pounds of trisodium phosphate in 1 gallon of water and add to the casein solution. Allow the mixture to dissolve. Prepare a thick cream by mixing 50 pounds (one sack) hydrated lime in 7 gallons water, stirring vigorously. Dissolve 3 pints of formaldehyde in 3 gallons of water. When the lime paste and the casein solution are both thoroughly cool, slowly add the casein solution to the lime, stirring constantly and vigorously. Care must be taken not to add the formaldehyde too rapidly, as carelessness may cause the casein to "jell out" and spoil the batch.

In place of the hydrated lime a cold lime paste from the slaking of 38 pounds of burnt lime may be used.

This mixture may be either spray-

ed or applied with a brush.

A simpler mixture but not so durable is made by slaking carefully 20 pounds burnt lime by adding 6 gallons of water in small portions. In a wooden vessel dissolve 1 pound zinc sulphate in 1 gallon of water. When dissolved, add the sulphate solution to the lime. Then add 1 gallon of skim milk. Make up enough for only one day's application, and keep the mixture stirred while it is being applied. Apply with brush.

A good laugh and a long sleep are the best cures in the doctor's book.—
Proverbs of Ireland.

Spuds Johnson says your good name works for you all the time; adding to its strength.

BOXES OF FRUIT AND BILLS LADING MUST BEAR STAMPS

Growers and members of the Fruit Growers League seem to be doubtful concerning the interpretation of the law requiring the stamping of each box or bill of lading of citrus fruit shipment.

The inspection department issues five different sizes of stamps. For single boxes, 1½c; for 10 boxes, 15c; for 300 box car, \$4.50; for 350 box car \$5.25; for 400 box car \$6. The stamps may be put on the boxes in case of the small express shipments or on the bill of lading in case of box car shipments, it is stated.

The stamps are used as though they were postage stamps, as for instance if a car contains 375 boxes a stamp for 350 boxes, two ten-box and five one box stamps should be pasted on the bill of lading.

In bulk shipments, 80 pounds or two cubic feet are considered a box.

OLD BOOK SHOWS IMPROVEMENT IN ORANGE GROWING

An old Italian volume published in Rome in 1646 and recently accessioned by the Library of the Florida Agricultural Experiment Station shows clearly and conclusively the great progress and improvement made the orange since that time. The work is Ferrari, J. B. "Hesperides sive de malorium aureorum cultura et usu." The text is illustrated with numerous plates.

It is announced by Mrs. Ida Kelling Cresap, librarian, that this volume and two other old ones have been added to the library to aid in the research work on citrus which is being conducted.

This old and valuable Italian volume was purchased in Holland from an old book dealer, and has doubtless been the property of some noted men during its life of nearly 300 years.

It is planned to add other important works on subjects of interest to agricultural research workers during the present year, says Mrs. Cresap.

6 facts

one opportunity

1. The banana plant bears in 9 to 12 months.
2. Bananas mature each month in the year.
3. Each "hill" will bear from 4 to 8 "stems" at the end of the second year.
4. Bananas are planted 400 bulbs to the acre.
5. Bunches weigh from 40 to 100 pounds each.
6. Bananas sell at wholesale from 6c to 8c per Pound.

Just combine these facts on your notepad and convince yourself. Isn't it worth knowing more about? We will gladly mail you our illustrated booklet on Growing Cavendish Bananas in Peace Valley. Just return the coupon.

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Address _____

E. L. Wirt Returns From Extended Trip

Mr. E. L. Wirt, of Bartow, newly elected president of the Florida Citrus Exchange, returned August 17 from an extended trip through the Middle and Far West in the interests of the cooperative marketing organization. Just before returning to Bartow Mr. Wirt attended and addressed the convention of the Exchange representatives at Cleveland.

In his many interviews with the trade throughout the markets in his itinerary Mr. Wirt found high appreciation of the growing quality of Sealdsweet and Florida Citrus Exchange methods. "In many instances the brokers and the jobbers handling our fruit voluntarily commented on the fact that the grade and pack of the Exchange during the past season was a valuable asset in building up and increasing trade recognition for Sealdsweet.

"This feature rivals the wide-



E. L. Wirt

spread, results-getting hold our slogan, "¼ more juice in Florida fruit" is obtaining. I found the latter com-

mented upon practically everywhere I went. These two factors have been of untold benefit in increasing the hold Sealdsweet has in many markets and opening other new markets to the Exchange.

"And the Exchange has just begun to merchandise these benefits", Mr. Wirt concluded. "The incorporation of the '¼ more juice' feature in all our advertising and the policy of the Exchange during the coming season to better and more closely unify its grade and pack will go even farther toward putting Sealdsweet over the top in all markets, particularly in view of the fact that we are now equipped in an organization way to properly take care of every phase of the many details required to obtain these ends. I am fully confident that even more satisfactory results will accrue from our work this coming season."

FORMER EDITOR JOINS INSECTICIDE COMPANY

Announcement comes from Orlando that Mr. E. H. Favor formerly managing Editor of the American Fruit Grower magazine has associated himself with the sales and service department of J. Schnarr & Company.

Mr. Favor is a graduate of the University of Missouri, and after graduation served that institution for six years as Assistant Horticulturist. He then became Field Horticulturist for a publication known as "The Fruit Grower" of St. Joseph, Mo. He was located in the Pacific Northwest at the time the irrigated land boom was at its height. Mr. Fav-

or escaped from that region without having been bitten by the irrigated land bug and returned to the St. Joseph office where he was made Managing Editor of the publication. He continued this position for some ten years, when the publication suspended operations.

Later Mr. Favor entered the service of Hayes Pump & Planter Company at Galva, Ill., for technical horticultural work among their sprayer trade. Later he returned to journalistic work as Managing Editor of the American Fruit Grower magazine which had virtually become the successor of the defunct publication at St. Joseph.

In speaking of his new connection Mr. Favor says: "I am delighted to

be here and in this work. For a number of years I have wanted to be located in Florida, as the state and the citrus fruits have had a strong appeal to me. And now it is realized."

In securing the services of Mr. Favor, we believe that J. Schnarr & Company have made a valuable acquisition and the state has gained a citizen of worth and wide experience along horticultural lines.

To be seventy years young is sometimes far more cheerful and hopeful than to be forty years old.

—Oliver Wendall Holmes.

Man is the merriest species of the creation all above or below him are serious.—Addison.

THE ANGE BILT

Orlando's Most Distinctive Hotel

Fireproof—Every room with private bath—Fireproof

Excellent Dining Room Service 10th Floor

"The Height of Hospitality"

Orlando, Florida.

Arthur F. Landstreet, Manager

Satsumaland Fruit Growers Hold Important Directors Meeting

In many ways the meeting held at Vernon, Fla., August 15, was one of the most important sessions of Satsumaland Fruit Growers held in years. Reports from crop yields and prospects were most encouraging. Young groves and vineyards are doing remarkably well. By clearing and following a large acreage is being prepared for fall and winter setting. Nursery stock will be abundant this year.

The most important matter in hand was the consideration of the report of the committee appointed at the last meeting to plan for the raising of a publicity fund to aid in advertising Satsumaland. Many members participated in the discussion, as did Mr. Thomas, advertising expert, Colonel Page, president of the Panama City Chamber of Commerce, and Messrs. Scott and Parish, of the Jacksonville Times-Union.

It was decided to instruct the committee to proceed with the plan, setting the minimum sum to be raised at \$3,000, and providing that the

committee exercise supervision over the expenditure of the sum and the use and distribution of responses. The association desires to cooperate with Chambers of Commerce and other "booster" organizations in this section, and solicits their assistance in its work. The series of "booster sections" being gotten out by the Jacksonville Times-Union was approved, and patronage and support pledged to that proposal for Satsumaland in the near future.

This association is not directly interested in any "development scheme", having no land to sell. Indirectly it is interested in the success of every worthy project and every community. Only by such development can fruit growing be put on a permanent paying basis. The good people of Vernon entertained the crowd at a lavish basket dinner served under the spreading oaks on the banks of Holmes Creek. No one present will forget the event. It would have been a convincing display for "home seekers".

CROP YIELDS PER ACRE ARE SMALL THIS YEAR

Low yields per acre are to be expected this year for the principal crops of the United States, the Department of Agriculture has announced. The published figures show that a yield of all crops combined 4.5 per cent under last year's crops and 6.4 per cent below the ten year average is indicated by present conditions. Only once in the last dozen years has the prospect for yields been so low at this time of the year, the exception being 1921. Drouth in the Corn Belt and southwestern States is the principal cause of the poor showing.

The figures issued by the Crop Reporting Board, based on the condition of crops on August 1, show that the yields of various crops are expected to be below their ten year averages by the following percentages: Cotton 9 per cent, hay 16.2 per cent, corn 0.9 per cent, oats 3.2 per cent, potatoes 3.5 per cent, sweet potatoes 12 per cent, tobacco 6.1 per cent, sugar beets 9.3 per cent, apples 11 per cent, barley 1.7 per cent, grain sorghum 15.7 per cent. The only crops for which increased yields per

acre are expected are spring wheat, which is expected to run over the five-year average yield per acre by about one-tenth of a bushel, and a few crops which are concentrated in limited areas, the list including citrus fruits, olives, walnuts, hops, sugar cane, buckwheat, and some vegetables.

In the early spring, the department points out, farmers were aided by generally favorable weather conditions, and an increased area of 2.3 per cent over last year was planted to the principal crops. The increased area under cultivation is not, however, sufficient to offset the reduction probable from poor yields, with the result that, in proportion to population, the total production of all crops combined is expected to be about 3 per cent lower than last year, and lower than in any other recent years except 1911 and 1921.

A large part of every farmer's mental capital should be the experiences of others.

The original fly would not have been in the original ointment if his family tree had been well swatted two or three generations back.

"Everything Needed for Spraying and Dusting"

When You Are Spraying

What a feeling of satisfaction it gives you to know that your work is being done with the best of materials—the kind most certain to produce crops running high in top grades.

The best in every way is

SCHNARRS

For fifteen years Schnarr Products have been the choice of the most discriminating growers of citrus and vegetables. Likewise, Schnarrs Economy Sprayers and Florida Standard Dusters are the best that mechanical skill and years of experience can produce.

Send for a copy of our New Catalog and Price List describing our complete line of Spray Materials and Machines. It is Free.

J. Schnarr & Co.

Orlando, Fla.

Winter Haven, Fla.

"Everything Needed for Spraying and Dusting"

C. of C. to Assist Fruit Growers

The plan of the Satsumaland Fruit Growers to extensively advertise the agricultural and other resources of the six counties which form its territory has been warmly approved by the Chamber of Commerce of Panama City.

Several meetings have been held in furtherance of the plan and assurance of substantial support in a financial way have been given by influential members in the various counties. Another meeting to complete arrangements will be held in a short time.

Capacity to produce a diversity of crops, in addition to dominance in the Satsuma industry, give this section an advertising story different from other portions of the State and the purpose of the movement is to strongly

stress these peculiar advantages.

Panama City is the commercial center of Satsumaland and has been suggested by members from other counties as head-quarters of the advertising. The Chamber of Commerce has volunteered its facilities in making the campaign more efficient and to reduce its overhead expense.

The executive committee of the local trade body also voted unanimously to instruct the president, Col. Henry Page, to make a recommendation as to the amount that should be budgeted by it as a contribution to the fund, after consultation with the officers of the Satsumaland Fruit Growers. Sentiment among members of the committee is favorable to a liberal appropriation.

BETTER TRANSPORTATION SERVICE ESSENTIAL

Continued from page 5

A careful analysis of our shipments leads us to believe that fully 30 per cent, if not more, of the shipments from Florida encounter from one to several days delay between shipping point and final destination.

From these comparisons, it can be easily seen that our competitors at present enjoy an advantage that is naturally ours. With service brought up to the equal of our competitors, Florida products can be delivered in the markets in much better condition than at present, which will mean a return of many thousands of dollars to the trade, expansion of the industry, and the consequent gain to the carriers in increased traffic. Then, too, refrigerator cars would make more average trips per season, and result in savings to the carriers, which would ultimately reflect to the public good, as lower transportation cost should mean lower rates.

We believe that everyone interested in this state is fully alive to our wonderful possibilities, and it is the general desire to realize them. Constant improvement in our transportation service is a matter that we cannot overlook in striving toward that end.

Yours very truly,
CHASE & COMPANY
M. L. CULLUM
Traffic Manager

Several tablespoons of peanut butter creamed with shortening give a novel and delicious flavor to cookies.

BORAX AS A DISINFECTANT FOR CITRUS FRUIT

Continued from page 9

From the results of the experiments herein reported it is evident that blue mold rot, which causes so much damage to Citrus fruit in California, can be largely controlled by treating the fruit with a solution of borax. Much of the work described in this paper was done in the packing house and with equipment suitable for application in a commercial way. It remains however to make further experiments on a commercial basis, to determine the value of the treatment in actual shipping and marketing tests. While borax in the concentration used is not so effective in the control of green mold as in that of blue mold, it is probable that higher concentrations of borax or other disinfectants may be found which will be effectious against this fungus. Work along these lines is in progress.

Better times are predicted for beef producers by the United States Department of Agriculture. All signs indicate that the beef and cattle industry is headed toward rising prices.

The United States Department of Agriculture is recommending that celery crates be standardized over the United States. Florida crates are more nearly standard than those of other sections.

Time spent attending a better-farming demonstration may prove a hundred fold more valuable than the same time spent any other way.

A Good Crop
of Fruit,
Fine in Quality
and Texture,
Will be
Your Satisfaction
of Using
ORANGE
BELT
BRAND
of Fertilizer



Quality Fertilizer
for
Quality Fruit

Australian Fresh Fruit Shipments

Australian fresh fruit has gone forward very satisfactorily during 1925, states Mr. H. E. Coates, American Vice-Consul, at Melbourne, Australia, in a report received in the Department of Commerce.

Estimated shipments of apples to Europe for the season (1925) were about 1,750,000 cases; Tasmania will probably contribute around 1,155,000 cases. Before the opening of the season, it was anticipated that not more than 1,250,000 cases of apples would be exported but the favorable weather with resultant good crop, combined with a strong demand from Great Britain, strengthened the overseas apple shipments. As high as 23 shillings (approximately \$5.52) was paid for some of those Australian apples in England.

Small quantities of apples—the first since the War—have been shipped direct to Germany during 1925. Pears have also been shipped in large

quantities during 1925, due largely to the satisfactory returns received by Australian exporters in 1924 and to the low 1925 prices realized in Queensland. But little interest is taken in the exporting of fresh apricots, peaches, and passion fruit as the marketing risks appear too great. Western Australia is giving some attention to the export of grapes, and it is reliably reported that trial shipments of pineapples from Queensland have proved failures.

The export of Australian oranges to Europe will commence some time after the apple shipping season closes. As there is general expectation of heavy orange crops in Australia, states Mr. Coates, it would appear that the export of citrus fruit to Europe should show an increase. At the last conference of Australian citrus growers, it was stated that citrus exports to the Orient have shown very disappointing results.

SATSUMA GROVES

The Satsuma groves throughout this section of the state are in a wonderful condition. Practically the only thing that can now damage the future crop will be excessive rains, which do considerable harm as it has a tendency to force a new growth in the fruit, which at this stage of three-fourths ripe, causes the fruit to burst open, says the Panama City Pilot.

At all of the farms visited the trees are rather well loaded. At Cherokee farm, the Satsuma and grapefruit trees are in fine form. This orchard is about 11 years old, well cultivated and cared for. Its output this year will far exceed that of former years. Two years ago one of these trees by actual count produced 2,800 Satsumas, while another close to 3,000.

A fruit farm is very interesting when you study it from the ground up and not take it in with a careless casual glance, admiring the symmetrical rows of trees, which is only a matter of detail; however it is problematical whether the average visitor's scope of vision goes beyond this or not.

Observe the ground carefully, the trunk of the trees, the foliage, then note the condition of the fruit. If all of these stand close examination satisfactorily, then the fruit is up

to standard, otherwise if there is any inferiority in any of these, then it will show up in the fruit.

Tourists and especially those wishing to locate here should be taken out to the citrus farms by all means so they can see just to what great extent Satsuma oranges and grapefruit can be grown here.

Bay county has the soil and the climate to produce almost anything that is grown elsewhere in the state. Celery has been experimented with very satisfactorily, as have various other kinds of vegetables.

COWAN MADE ASSISTANT CHEMIST AT FLORIDA EXPERIMENT STATION

The announcement has been made by Dr. R. W. Ruprecht, chemist of the Florida Experiment Station, of the appointment of E. W. Cowan to the position of assistant chemist at the Experiment Station. Mr. Cowan is a graduate of the University of Missouri, having received both the B. S. and A. M. degrees.

He has had considerable experience in station work, having been assistant chemist at the Missouri Station. He has also had experience in conducting field experiments.

Mr. Cowan's work at the Experiment Station will deal principally with the large number of fertilizer experiments now being carried on in various sections of the state.



SERVICE Seldom Needed But SERVICE When You DO Need It

—That's what you want and what you get with Hardie Sprayers. Read these letters as typical proof:

- 1 "We have one of the first Hardies in this section of the country. For eleven years we have been trying to wear it out but without success."
- 2 "But above all, I want to compliment you for the service you give on the Hardie. It's certainly a pleasure to know that you take an interest in the machine and me after you have my money."

HARDIE DEPENDABLE SPRAYERS

In every fruit district we are represented by selected dealers and our travelers are constantly in touch with Hardie owners as well as prospective buyers.

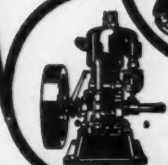
Note This Service Map of Florida

Ten Branches
and
Warehouses
Are At
Your Service

GULF
FERTILIZER
COMPANY
TAMPA, FLA.



Hardie
Pumps elim-
inate 90 per
cent wear.
Find out
how.



The famous
Cushman En-
gine weighs
1/2 to 1/2 less
than others of
equal power

THE RELATION BETWEEN QUALITY PRODUCTION A STANDARD PACK, AND THE HIGH DOLLAR

Continued from page 19

upon which we must build and are essential to the most effective operation of these other two great factors in the production of results. Given such quality and pack, supplemented by properly conducted advertising and efficient marketing service, and we shall have the elements which, as far as possible, insure success.

In a discussion of this nature there are so many things that might be said that it is difficult to know just where to begin, and more difficult to know when to end and how to avoid narrowing the discussion to certain particular lines. The illustrations that have been used and certain parts of this discussion had to do especially with citrus fruits, but that has been only for the purpose of illustrating the point in question. The principles involved apply just the same to every other line of fruits and to all kinds of vegetable products.

It is rarely that we accomplish much until we realize our responsibilities. It is my belief that the measure of the future success of producers of fruits and vegetables in Florida is very largely in their own hands, depending on their attitude toward this question of quality production and standardized packing on a high plane. The attitude and resultant action of every individual grower materially affect both his own personal interests and the entire industry. The question presents not merely an opportunity but an obligation.

CITRUS FRUITS AT HEALTH FOOD SHOW

Fruit and Vegetable Growers Associations have been invited by the National Dairy Association to arrange exhibits at the health food show to be held during the National Dairy Exposition at Indianapolis, October 10 to 17. The important part that fruits and vegetables play in the human diet in the promotion of health and prevention of certain diseases will be pointed out during the exhibition.

Dr. E. V. McCollum, a professor of chemical hygiene of the School of Hygiene and Public Health of Johns Hopkins University will supervise the arrangements of the exhibits. Under his direction foods will be classified, their values charted, and their preparation demonstrated by leading nutrition workers. Dr. Mc-

THE CITRUS INDUSTRY

Collum who first achieved national prominence as a nutrition worker at the University of Wisconsin, has been connected with Johns Hopkins University since 1917. After patient research of three years, Dr. McCollum with his assistants, Miss Nina Simmonds and Dr. P. G. Shipley of Johns Hopkins, succeeded in isolating Vitamin D in 1922. Vitamin D has been explained by Dr. McCollum as the food element which promotes bone growth and present rickets, a disease of early childhood chiefly due to deficient nutrition and characterized by softening of the bones and consequent deformity.

"The purpose of the health food show during the exposition is to educate the public to the quality of the more important foods from the agricultural standpoint and to emphasize in particular the supplementary relation of certain foods to others", Dr. McCollum said. "Fruits and vegetables will have a prominent part in the exhibit. Certain fresh fruits especially those of the citrus group which includes the lemon, orange, lime and grapefruit, have long enjoyed popularity in their potency in preventing scurvy. Also have leafy vegetables when eaten raw been found excellent preventives of scurvy. It is in these citrus fruits and in raw cabbage, raw potato, raw carrot, and lettuce that Vitamin C is found."

CLASSIFIED ADVERTISEMENTS

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

REAL ESTATE

For Sale—Pineapple land in winterless Florida. \$15 an acre. Almont Ake. Venus Fla.

WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY. ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.

WILL EXCHANGE West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 3410 McKinley Ave., El Paso, Texas.

EARLY BEARING Papershell Pecan trees, budded or grafted and guaranteed. Great shortage this year. Write for catalog today. Bass Pecan Company, Lumberton, Miss.

September, 1925

FOR SALE—Cleopatra Mandarin seedlings. September delivery, enter order now. Cavendish banana plants and avocado trees. Write for price list. R. E. Skinner, Hillsboro Hotel, Tampa, Florida. May-4t.

BANANA PLANTS for sale. Improved Cavendish, Hart, Orinoco, Ladyfinger. Information free. W. E. Bolles, Oldsmar, Fla.

"BOOK OF TRUTH"

For planters of new groves
Is yours for the asking,
Write Today.

OCKLAWAIA NURSERIES INC.

"Pedigreed Citrus Trees"

Lake Jem, Florida

FOR SALE CHEAP—Eleven acres high, rooly citrus land; 4 acres cleared with small house, and large nice bearing orange trees full of fruit. Nicely located near Altamonte Springs, Fla. For particulars write H. A. Lanquar, 41 N. W. 29th St., Miami, Fla.

POLK LAKE NURSERIES

Offer to the grower young trees of standard variety, backed by 30 years of nursery experience and a guarantee which only honest dealing can justify. For full information address A. H. Sloan, Box 413, Bartow, Fla.

MISCELLANEOUS

FOR SALE—Dairy and stable manure, car lots. Link & Bagley, Box 464, Tampa, Florida. 6t

WHITE WYANDOTT Cockrels, regal strain—the best in the country, direct from Martin pens. Utility and show birds \$5.00 each; also eggs for hatching \$5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Florida.

REPOSSESSED player piano may be purchased for small unpaid balance by reliable parties on easy payments. We guarantee this player to be in excellent condition and a very unusual buy. Plenty of good rolls and bench included. M. L. Price Music Co., Tampa & Zack St., Tampa.

SOUTHDOWN SHEEP. White Rocks, Toulouse Geese, Guineas, Angora and Milk Goats, Circular free. Woodburn, Clifton, Va.

AGENTS—Quality Shoes, quick sellers. Big commissions, immediate returns! Repeat orders. Experience unnecessary. Write full particulars. Tanners Shoe, 2011 C St. Boston.

FOR SALE

Remington Portable Typewriter with standard keyboard. Has all advantages of larger machine. Ideal for farm and home use. \$60. cash or sold on easy terms. Remington Typewriter Co., 103 Parker St., Tampa Florida.

FARM—GROVE—HOME

22 acres large bearing grove; modern two-story, 8 room house, completely furnished on third largest lake, in state in thriving town; good roads, church, school; complete line farm implements and tools. P. F. Cloonan, Yalaha, Lake County, Florida.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Florida.

Laredo soy beans, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

FOR SALE: Rebuilt Band Instruments from \$5.00 up. Terms if desired. M. L. Price Music Co. State Distributors—C. G. Conn Band Instruments, Tampa.

Wanted AT ONCE few dozen fresh bitter-sour Marmalade Oranges. Price C. O. D.? M. L. Manning, 15 West Chase St. Baltimore, Md.

WANTED to correspond with growers of the Red Guava. Business. M. L. Manning, 15 West Chase Street, Baltimore, Md.

MILLION Porto Rico Potato Plants, \$2.50-1000. W. W. WILLIAMS, QUITMAN, GA.